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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re the Application of:

YAMAMOTO et al.

Art Unit: 2826

Application No.: 09/925,740

Examiner: A. Williams

Filed: August 10, 2001

Attorney Dkt. No.: 108384-00030

For: COPPER CLAD LAMINATE

RESPONSE UNDER 37 CFR § 1.111

Commissioner for Patents
Washington, D.C. 20231

Date: July 23, 2002

Sir:

In reply to the outstanding Office Action dated April 23, 2002, the following is a full and complete response thereto.

REMARKS

Claims 1-4 are pending and Claims 1-4 stand rejected.

Claims 1-4 have been rejected under 35 U.S.C. 103(a) as obvious in light of the Eriguchi patent (U.S. Patent No. 5,583,320). The Examiner has taken the position that Figures 1-4(b) of the Eriguchi patent disclose the presently claimed invention. It is submitted that this rejection is not well taken for the following reasons.

To begin, it is submitted that Figure 1 of the Eriguchi patent discloses a cross section of a flexible printed circuit board (1) with a reinforcement (2). The reinforcement (2) employs resin films represented by reference numerals (21) and (22). It is noted that the material used for external material (22) is an organic material film, as disclosed

in Col. 3, lines 14-19 of the Eriguchi patent. It is also noted that the material used in the internal material (21) is an organic-material film, as disclosed in Col. 3, lines 39-46 of the Eriguchi patent. Therefore, the internal material (21) of the Eriguchi patent cannot be made of copper. Furthermore, while the resin films represented with reference numbers (21) and (22) might undergo a curing reaction, they do not undergo recrystallization. Therefore, it is submitted that the Eriguchi patent cannot anticipate the present invention as the present invention requires two copper layers, including a copper layer that can be recrystallized.

Additionally, it is submitted that the adhesive (3) of the Eriguchi patent that is located between materials (21) and (22) is formed of an organic material and that the reinforcement (2) is also made of an organic material (as seen in the specification). It is also disclosed in the Eriguchi patent that the flexible printed circuit board (1) comprises a substrate (11) and a circuit (12). As seen in Col. 2, lines 52-59, of the Eriguchi patent, the substrate (11) is a flexible organic material and it is also noted that only the circuit (12) is a metal layer which has been formed of a metal foil, an electrically-conductive paste, and the like. Therefore, it is again submitted that the Eriguchi patent cannot render the present invention obvious because it does not teach or suggest the use of two copper layers.

It is also noted that the invention of the Eriguchi patent, as illustrated in Figure 1 of the Eriguchi patent, is different from the present invention. Specifically, the presently claimed copper clad laminate has on both of its surfaces a copper foil layer, and an insulation layer is positioned between the copper foil layers. However, it is noted that only one layer, that of circuit (12), exists in the Eriguchi patent. Thus, it is submitted that

the Eriguchi patent does not disclose two different kinds of copper foil layers (such as a second and first layer). Further, it is submitted that the Eriguchi patent does not discuss either the claimed contraction of the copper foil or the Young's modulus requirement.

It is observed that the Eriguchi patent discusses Young's modulus in Col. 5 of the Eriguchi patent. However, the Eriguchi patent is discussing the relationship between (a) the internal and external materials (21 and 22) which together form the reinforcement (2) and (b) the flexible printed circuit board (1) and the reinforcement (2). Additionally, the description found in the Eriguchi patent relates to a theory to be established after the configuration of the circuit (12) has been completed and not to a double-sided copper clad laminate of the present invention wherein a configuration of a circuit has not been completed. Therefore, it is submitted that the theories disclosed in the Eriguchi patent are not relevant to the present invention and that the Eriguchi patent cannot anticipate the present invention for these reasons as well.

It is also submitted that the same arguments present above may be made regarding the remaining diagrams of the Eriguchi patent. Therefore, it is submitted that the Eriguchi patent does not teach the presently claimed copper clad laminate in which a copper foil that is recrystallizable through hot pressing is employed on one side of the copper laminate, and a copper foil that is not recrystallizable through hot pressing is employed on the other side of the copper laminate. It is requested, then, that this rejection be withdrawn for these reasons as well.


The Examiner also rejected Claims 1-4 under 35 U.S.C. 103(a) as obvious in light of the Kuwako application (U.S. Patent Publication No. 2002/5249A1). However, as the Kuwako application has a priority date of July 12, 2001, it is submitted that the

attached verified English translation of the Japanese priority document (filed on August 25, 2000) for the present application removes the Kuwako application as prior art. Therefore, it is requested that the rejection be withdrawn.

If for any reason, the Examiner feels the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not timely filed, Applicants hereby petition for an appropriate extension of time. The fee for this extension may be charged to our Deposit Account No. 01-2300, referring to client-matter number 108384-00030, along with any other fees which may be required with respect to this application.

Respectfully submitted,


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Enclosure: Priority Document